![Tamkang University logo] 淡江大學 Tamkang University

Syllabus

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Course: Engineering Mathematics I   3 credits
Prerequisite: Calculus
Class: Class 2009-A, Aerospace Eng.
Lecture: Tue: 4:10 ~ 6:00 PM, Thr: 3:10 ~ 4:00PM
Office hours: Mon, Tue, Thr, and Fri.: 11:00AM ~ 6:00PM or by appointment
Textbook:

Henry Edwards, and David E. Penney, *Elementary Differential Equations with Boundary Value Problems,* 5th ed., Pearson Education, 2004.（Imported by 高立圖書公司）.

References:

1. Robert L. Borrelli, and Courtney S. Coleman, *Differential Equations, A Modeling Perspective*, 2nd ed., John Wiely & Sons, Inc., 2004.（Imported by 新月圖書公司）

2. Michael Greenberg, *Advanced Engineering Mathematics*, 2nd ed., Prentice Hall, 1998.（Imported by 滄海書局）

3. Peter V. O'Neil, *Advanced Engineering Mathematics*, 5th ed., Brooks/Cole Publishing Company, 2002.（Imported by 新月圖書公司）

4. Henry Edwards, and David E. Penney, *Differential Equations and Boundary Value Problems, Computing and Modeling*, 3rd ed., Pearson Education, 2004.（Imported by 新月圖書公司）.

5. Erwin Kreyszig, *Advanced Engineering Mathematics*, 9th ed., John Wiley & Sons, Inc., 2006. (Imported by 歐亞書局)

Course Objective:

First-order differential equations. Second-order differential equations. Series solutions of differential equations,. Laplace transforms Method, and Fourier series Methods.

Course Schedule:

Week	Dates	Material covered
1st week	09/12, 09/14	Syllabus, Review Integration by Parts, First-Order Differential Equations.
2nd week	09/19, 09/21	First-Order Differential Equations.
3rd week	09/26, 09/28	First-Order Differential Equations.
4th week	10/03, 10/05	Second-Order Differential Equations
5th week	10/12	1st Exam (7:00~9:00 PM, 10/11,Wensday), Second-Order Differential Equations
6th week	10/17, 10/19	Second-Order Differential Equations
7th week	10/24, 10/26	Second-Order Differential Equations, The Laplace Transform
8th week	10/31, 11/02	The Laplace Transform
9th week	11/07, 11/09	The Laplace Transform
10th week		2nd Exam (11/12)
11th week	11/21, 11/23	Linear Systems of Differential Equations
12th week	11/28, 11/30	Linear Systems of Differential Equations
13th week	12/05, 12/07	Linear Systems of Differential Equations
14th week	12/12, 12/14	3rd Exam (7:00~9:00 PM, 12/11, Monday), Power Series Methods
15th week	12/19, 12/21	Power Series Methods
16th week	12/26, 12/28	Fourier Series Methods
17th week		
18th week		4th Exam (01/09)

Grading Policy[*]:

1. Quizzes (held every Monday night), Homework Assignments, and Class Attendance take 20% of course grade.
2. Exams, there are four exams and each takes 20% of course grade.
   1st Exam includes: First-Order Differential Equations (Chapter 1).
   2nd Exam includes: Second-Order Differential Equations (Chapter 2), and The Laplace Transform (Chapter 4).
   3rd Exam includes: Linear Systems of Differential Equations (Chapter 5).
   4th Exam includes: Power Series Methods (Chapter 3) and Fourier Series Methods (Chapter 8).

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[*] I reserve the right to change the policy.